

(No Model.)

C. M. EMERSON.

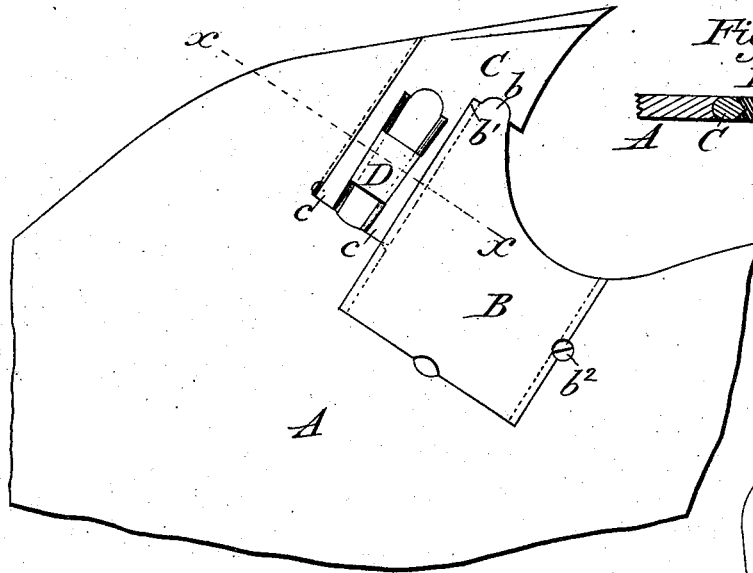
2 Sheets—Sheet 1.

SAW TOOTH.

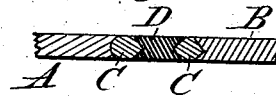
No. 260,552.

Patented July 4, 1882.

*Fig. 1.*



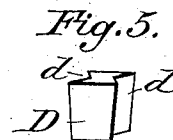
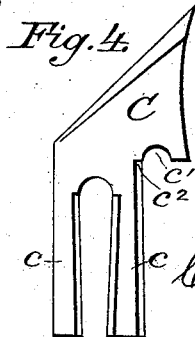
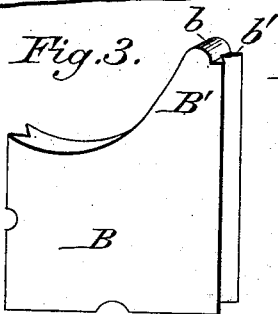
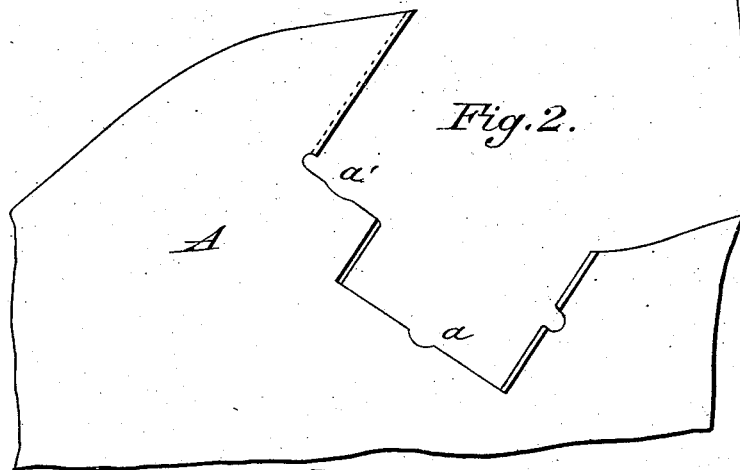
*Fig. 6.*



*Fig. 7.*



*Fig. 2.*



*Attest*  
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*A. R. Brown.*

*Inventor:*

*Charles M. Emerson*  
*per J. C. Tasker atty*

(No Model.)

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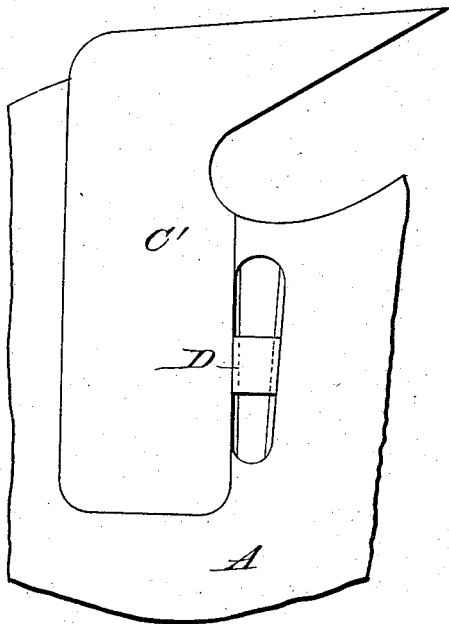
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SAW TOOTH.

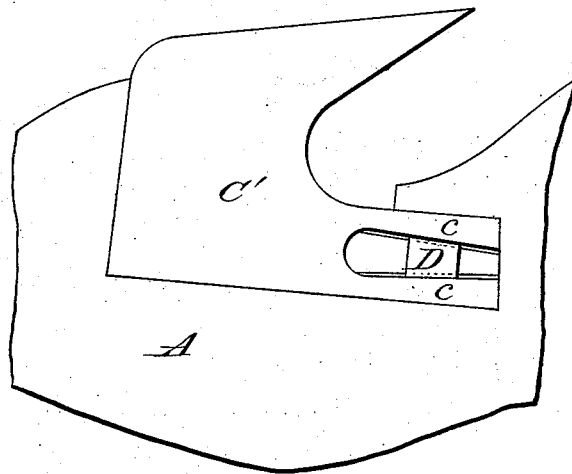
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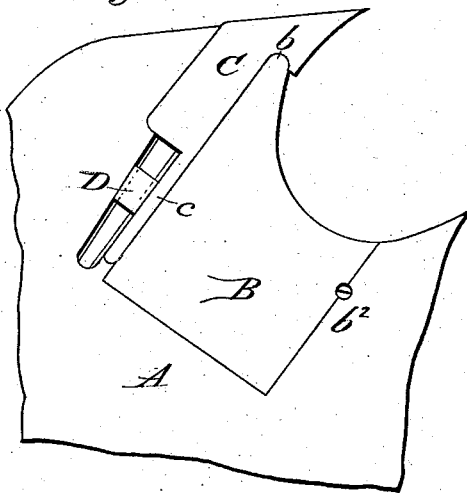
*Fig. 8.*



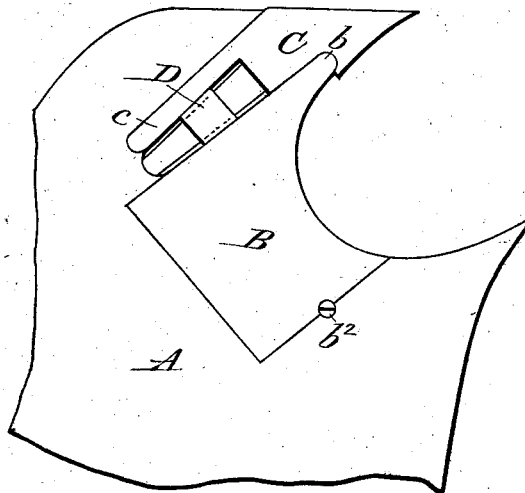
*Fig. 9.*



*Fig. 10.*



*Fig. 11.*



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*Charles M. Emerson*  
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*att'y*

# UNITED STATES PATENT OFFICE.

CHARLES M. EMERSON, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO  
ELIAS C. ATKINS, OF SAME PLACE.

## SAW-TOOTH.

SPECIFICATION forming part of Letters Patent No. 260,552, dated July 4, 1882.

Application filed March 24, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES M. EMERSON, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Saw-Teeth; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to removable teeth for circular saws; and it consists in certain peculiarities in the construction and arrangement of parts, as hereinafter more fully described and claimed.

In the annexed drawings, which fully illustrate my invention, Figure 1 is a side view of a section of a circular saw-plate, with throat-piece, and removable tooth in position and secured by a sliding wedge or key. Fig. 2 is a side view of the saw-plate with throat-piece and tooth removed. Fig. 3 is a perspective view of my improved throat-piece or locking-plate. Fig. 4 is a perspective view of my improved removable tooth. Fig. 5 is a view of the locking wedge or key. Fig. 6 is a section on the line *x x* of Fig. 1. Fig. 7 is a view of the instrument for detaching the tooth and locking-plate. Fig. 8 represents a modification in which the tooth and throat-piece are formed in one piece and secured by a wedge adapted to slide in a recess formed in the saw-plate at the side of the combined tooth and throat-piece. Fig. 9 is a similar modification, in which the combined tooth and throat-piece is secured by a sliding wedge inserted in one end of the throat-piece. Figs. 10 and 11 are modifications in which the tooth is secured by means of a wedge or key adapted to slide in a space or recess between it and the saw-plate or between it and the throat-piece.

Like letters indicate like parts in the several views.

The periphery of the saw-plate A is provided with a number of rectangular recesses, *a a'*, the edges of which are beveled or rounded in

the usual manner for engagement with the grooved edges of the detachable throat-piece B and tooth or bit C. The throat-piece or locking-plate B is of a general rectangular form, having straight grooved edges corresponding with the beveled edges of the recess *a*, in which it fits. The upper edge of the plate B, however, forming the throat of the tooth, is curved, and has an elongated projection, *B'*, on one side, that serves as a spring to assist in holding the tooth in position. This projection may terminate in a rounded lug, *b*, and a shoulder, *b'*, as shown in Figs. 1 and 3; or it may be simply rounded, as illustrated in Figs. 10 and 11. The throat-piece may also be continuous with and form a part of the tooth, as shown in Figs. 8 and 9; or it may be separate therefrom, as indicated in the remaining figures.

The locking-plate or throat-piece is seated within its recess by means of the engagement of its grooved edges with the beveled edges of the recess formed in the saw-plate for its reception, and may be further secured from lateral displacement by the aid of a screw, *b<sup>2</sup>*, inserted in an opening that is formed in the adjoining edges of the throat-piece and saw-plate.

The tooth or bit C is preferably formed as shown in Fig. 4, in which its shank is represented as being slotted or recessed longitudinally and opened at one end, so as to form the spring arms or jaws *c c*. The shank of the tooth is fitted into the recess *a'*, formed by the saw-plate A and long side of the throat-piece B. This recess is slightly wider at its lower end than at its upper end, but may be of equal width throughout, and the arms *c c* of the tooth-shank are adapted to spread or spring outward, so as to bear against the edges of the recess when the tooth is in position. The spring-arms *c c* are also wider at their lower ends than they are at their junction with the tooth-body, their exterior edges being straight and parallel and their inner edges inclined inward from above downward. The outer edges of the arms *c c* are rounded or beveled to fit the grooved edges of the saw-plate and throat-piece, and their inner edges are also beveled to correspond with the grooved sides of the

locking wedge or key D, which is adapted to be forced downward or inward in the space or recess between the spring-arms *c c*, and thus cause them to bear firmly against the edges of the saw-plate and throat-piece, so as to hold the tooth securely. This key or wedge D, as shown in Fig. 5, consists of a block of metal having a slightly-tapering form, and provided with grooved sides *d d*, by which it is adapted to be moved in the space between the arms *c c* without liability of becoming displaced laterally.

At the lower edge of the tooth or bit C, in front of the spring-arms *c c*, is a curved opening, indentation, or recess, *c'*, for the reception of the rounded lug *b* at the end of the projecting portion of the throat-piece, the engagement of which therein serves to assist in locking the parts securely. In addition to the notch or opening *c'*, and on the inner side thereof, as shown in Fig. 4, may be formed a shoulder, *c''*, adapted to bear against the shoulder *b'* on the projecting end of the throat-piece.

If desired, the shank of the tooth C may consist of only one spring-arm *c*, and this arm may be arranged on either side, so as to bear against the throat-piece B, as shown in Fig. 10, or against the saw-plate A, as shown in Fig. 11, the wedge D being inserted in one instance into the space between the spring-arm and saw-plate and in the other case into the space between the spring-arm and throat-piece.

Instead of forming the tooth or bit and the throat-piece in separate pieces and connecting them, as shown in Figs. 1, 10, and 11, they may be made in one piece, as shown in Figs. 8 and 9. In both of the last-named figures the general form of the recess in the saw-plate is that of a rectangle corresponding with the shanks of the teeth C', which are inserted therein. These teeth are integral with their shanks or locking-plates, with which they form a continuous throat, and may be secured by means of a locking-wedge, D, adapted to slide in a recess, *a''*, formed in the edge of the saw-plate at the side of the tooth-shank, as shown in

Fig. 8, or by means of a wedge sliding in the space between the spring-arms *c c*, formed in the end of the tooth-shank, as shown in Fig. 9.

From the foregoing description the manner of inserting my improved saw-teeth is obvious. The tooth or bit, when placed in position, is secured by means of the wedge D, which is adapted to be moved in its recess in one direction, so as to hold the tooth firmly, or in the opposite direction to permit its removal. These movements of the tooth are readily accomplished by means of a tapering or wedge-shaped instrument, E, (shown in Fig. 7,) said instrument being adapted to be inserted into the spaces at either end of the wedge D for the purpose of moving the same in either direction, as desired. By pressing the wedge D in one direction the arms of the shank are caused to spread and bear against the contiguous parts, thus securing the tooth, and by pressing it in the opposite direction the arms are enabled to relax, so as to permit the removal of the tooth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the recessed saw-plate A, the removable throat-piece B, the tooth C, having one or more spring-arms, *c*, and the wedge D, having grooved edges and adapted to slide in contact with said spring-arms, substantially as described.

2. The combination of the saw-plate A, having rectangular recesses *a a'*, the detachable throat-piece B, having an arm, B', provided with lug *b*, the removable tooth C, having spring-jaws *c c* and notch *c'*, and the wedge D, having grooved sides *d d*, adapted to slide in the space between the spring-arms *c c*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. EMERSON.

Witnesses:

FRANK P. LINDSAY,  
M. G. McLAIN.